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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/630,572	08/03/2000	Hiroki Yoshida	44084-468	9613

7590 02/02/2005  
McDermott Will & Emery  
600 13th Street NW  
Washington, DC 20005-3096

EXAMINER

CARTER, TIA A

ART UNIT	PAPER NUMBER
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2626

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/630,572

Applicant(s)

YOSHIDA, HIROKI

Examiner

Tia A Carter

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments see remarks, filed 9-7-2004, with respect to claims 1-10 have been fully considered and are persuasive. The rejection of claims 1-10 has been withdrawn.

In regards to Applicant's response on pages 6-9 of the remarks concerning the 112 rejection of means plus function rejection, Examiner finds it to be persuasive wherein the image processor 20 of the current prior art of Kuwata et al. disclose support for the arguments of the Applicant whereas the controller 1 of the present invention controls the overall image processing functions.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Kuwata et al. (US. 6392759).

Regarding claim 1, <sup>Kuwata</sup>~~Nagao~~<sub>Kaw</sub> discloses an image processing apparatus (fig. 1, col. 8, line 41), comprising:

Edge detecting means (image processor 20) for determining the presence/absence of an edge at each pixel of input image data (fig. 1, col. 9, lines 65-67; col. 10, lines 1-4);

Selecting means (image processor 20) for selecting a weighting matrix corresponding to the position of the edge for each target pixel determined to have an edge by said edge detecting means (fig. 9-10, col. 10, lines 25-47);

Calculating means (image processor 20) for calculating data of the target pixel and the pixels surrounds the target pixel using the weighting matrix selected by said selecting means (fig. 9-10, col. 10, lines 35-58);

<sup>Kaw</sup> enhancement range determining means (image processor 20) for determining the range of edge enhancement for the target pixel based on the comparison result of said calculating means to a specific threshold value (fig. 13, col. 11, lines 7-36 and lines 44-67; col. 7, lines 1-20; col. 14, lines 57-61); and

edge enhancing means (image processor 20) for executing an edge enhancement process for the object pixels within the determined enhancement range determined by said enhancement range determining means (fig. 13-14, col. 12, lines 35-55).

Regarding claim 2, Kuwata et al. discloses an image processing apparatus according to claim 1, wherein

Said enhancement range determining means increases the weighting of components corresponding to the interior side of the edge in the weighting matrix (fig. 19, col. 14, lines 29-63).

Regarding claim 3, Kuwata et al. discloses an image processing apparatus according to claim 1, wherein said edge detecting means determines the edge to be between pixels (fig. 8, col. 10, lines 5-39).

Regarding claim 4, Kuwata et al. discloses an image processing apparatus according to claim 1, wherein said enhancement range determining selects the weighting matrix based on the presence/absence of an edge in four directions surrounding the target pixel (figs. 8, col. 10, lines 5-42).

Regarding claim 5, Kuwata et al. discloses an image processing apparatus according to claim 1, wherein said edge enhancing means executes processing based

on the hue and chroma of the pixels surrounding the object pixel. (fig. 1, col. 9, lines 65-67; col. 10, lines 1-23 and lines 35-39).

Regarding claim 6, Kuwata et al. discloses an image processing apparatus according to claim 1, wherein said edge enhancing means executes processing based on the distance of the object pixel to the target pixel (fig. 16, col. 11, lines 14-31; fig. 7, col. 12, lines 11-34).

Regarding claim 7, Kuwata et al. discloses an image processing method (fig. 1, col. 9, lines 65-67; col. 10, lines 1-4), comprising the steps of:

determining the presence/absence of an edge at each pixel of input image data (fig. 1, col. 9, lines 65-67; col. 10, lines 1-4);

selecting a weighting matrix corresponding to the position of the edge for each target pixel (pixel of interest) determined to have an edge (fig. 9-10, col. 10, lines 25-47);

calculating data of the target pixel (pixel of interest) and the pixels surrounds the target pixel using the weighting matrix (fig. 9-10, col. 10, lines 35-58);

comparing the calculation result to a specific threshold value (fig. 13, col. 11, lines 7-22 and lines 44-62);

determining the range of edge enhancement for the target pixel based on the comparison result (fig.13, col. 11, lines 23-36 and lines 63-67; col. 7, lines 1-20; col. 14, lines 57-61); and

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executing an edge enhancement process for the object pixels within the determined enhancement range (fig. 13-14, col. 12, lines 35-55).

Regarding claim 8, Kuwata et al. discloses an image processing method according to claim 7, wherein

The weighting of components corresponding to the interior side of the edge in the weighting matrix is increased in the step of determining the range (fig. 19, col. 14, lines 29-63; col. 15, lines 1-23)

Regarding claim 9, Kuwata et al. discloses a medium readable (hard disk 22) by a computer storing computer-executable programs (fig. 2, col. 9, lines 3-6) comprising the steps of:

determining the presence/absence of an edge at each pixel of input image data (fig. 1, col. 9, lines 65-67; col. 10, lines 1-4);

selecting a weighting matrix corresponding to the position of the edge for each target pixel determined to have an edge (fig. 9-10, col. 10, lines 25-47);

calculating data of the target pixel and the pixels surrounds the target pixel using the weighting matrix (fig. 9-10, col. 10, lines 35-58);

comparing the calculation result to a specific threshold value (fig. 13, col. 11, lines 7-22 and lines 44-62);

determining the range of edge enhancement for the target pixel based on the comparison result (fig.13, col. 11, lines 23-36 and lines 63-67; col. 7, lines 1-20; col. 14, lines 57-61); and

executing an edge enhancement process for the object pixels within the determined enhancement range (fig. 13-14, col. 12, lines 35-55).

Regarding claim 10, Kuwata et al. discloses an image processing apparatus (fig. 1, col. 8, line 41), comprising:

Edge detecting means for determining the presence/absence of an edge at each pixel of input image data (fig. 1, col. 9, lines 65-67; col. 10, lines 1-4);

calculating means for calculating data of the target pixel and the pixels surrounds the target pixel using the weighting matrix (fig. 9-10, col. 10, lines 35-58);

enhancement range determining means for determining the range of edge enhancement for the target pixel based on the comparison result (fig.13, col. 11, lines 23-36 and lines 63-67; col. 7, lines 1-20; col. 14, lines 57-61); and

edge enhancing means for executing an edge enhancement process for the object pixels within the determined enhancement range (fig. 13-14, col. 12, lines 35-55).

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Atkins et al. (US. 6721457) and Harrington (US. 6438270) is



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cited to show related art with respect to digital image enhancement via an image processing apparatus.

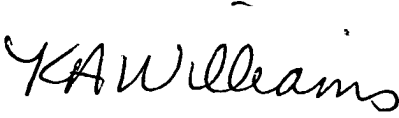
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tia A Carter whose telephone number is 703 - 306-5433. The examiner can normally be reached on M-F (7:00-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A Williams can be reached on 703-305-4863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
TAC  
1-21-2005

Tia A Carter  
Examiner  
Art Unit 2626

  
**KIMBERLY WILLIAMS**  
**SUPERVISORY PATENT EXAMINER**